For official use only
CGWB/SR/AR/2015-16/37

GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
CENTRAL GROUND WATER BOARD

PLAN ON ARTIFICIAL RECHARGE TO GROUNDWATER AND WATER CONSERVATION IN GIDDALURU MANDAL, PRAKASAM DISTRICT, ANDHRA PRADESH STATE

SOUTHERN REGION
HYDERABAD
AUGUST-2016

PLAN ON
ARTIFICIAL RECHARGE TO GROUNDWATER AND WATER CONSERVATION IN GIDDALURU MANDAL, PRAKASAM DISTRICT, ANDHRA PRADESH STATE

CONTENTS

AT A GLANCE

Name of the Mandal	GIDDALURU
District	PRAKASAM
State	ANDHRA PRADESH
Total Area sq.km.	861
Area suitable for Artificial Recharge (sq.km.)	482.69
Latitude and Longitude	14.959200 to 15.165680 and 79.789340 to 80.053240.
Average Annual Rainfall (mm)	636
Geology	Alluvium, Laterite and Schist
Average Depth To Water Level (Decadal) (Pre Monsoon)	25.23
Average Depth To Water Level (Decadal) (Post Monsoon)	5.46
Ground Water Resources	
Annual Replenishable Ground Water Resources (MCM/yr)	16.74
Net Annual Ground Water Availability(MCM)/yr	15.07
Net Annual Ground Water Draft(MCM)/yr	16.45
Projected Demand for Domestic and Industrial Use(MCM)/yr	0.46
Stage of Ground Water Development (%)	109
Surface runoff available (MCM)/yr	48.06
Total Storage Created in the Mandal by Various Agencies (MCM)/yr	1.76
Artificial Recharge/Conservation Measures	
Recharge Structures Proposed (No.s)	Percolation Tanks: 67, Check Dams: 168 Farm ponds: 440, Recharge Shafts: 125
Improving Water use Efficiency	Micro Irrigation System : 2200 ha
Tentative Total Cost in Lakhs (Rs.)	3547.635
Expected Recharge/Savings (MCM)/yr	16.585

1. INTRODUCTION

Giddaluru Mandal is one of over-exploited mandal in Prakasham district, Andhra Pradesh State, which is economically backward and chronically drought affected. The mandal has 18 inhabited villages and 4un inhabited villages with 19 gram panchayats.

2. LOCATION

The mandal lies between north latitudes 14.959200 to 15.165680 and between east longitudes 79.789340 to 80.053240. The mandal occupies the South-west part of the Prakasham district and is bounded on the north by Ardhaveedu mandal, on the east by Racherla mandal, on the south by Kurnool district and west by Kurnool district. (Fig.1) The geographical area of the mandal is 861 sq.km.

3. PHYSIOGRAPHY AND DRAINAGE:

The area is drained by streams which are tributaries of Pennar River. The streams are mostly ephemeral in nature. The drainage pattern is dendritic, rectangular to sub rectangular due to the influence of geological structures. (Fig.2)

4. RAINFALL

The average rainfall in the mandal is 636 mm. The rainfall during the South-west monsoon season i.e., June-September accounts for about 85% of the total rainfall.

5. LAND USE PATTERN

Out of the total geographical area of 861 sq.km, the area covered by forest is 595.98 sq.km and the net area sown is 117.54 sq.km. Barren and uncultivable land is 64.37 sq.km. The land for non agricultural use accounts for 21.75 sq.km.(Fig.3)

6. HYDROGEOLOGY

The area is underlain by The area is underlain by Meta sedimentary formations comprising of Schists, Laterites and alluvium (Fig.4). Ground water occurs in weathered and fractured zones under water table and semi- confined conditions. The weathered zone thickness as per the GEC report is 30 m. The weathered zone has been extensively tapped by dug and dug cum bore wells up to 20 m depth, which are mostly dry now. Ground water occurs in the fractured rock formations up to 200 m bgl. However, the potential fractures are encountered between 50-100 m bgl. The cumulative yield varies from 2-5 lps.

7. GROUND WATER LEVEL SCENARIO

The depth to water level during the pre-monsoon and post-monsoon varies from 5 to 10 m. The average depth to water level (decadal) during pre and post monsoon is 25.23 and 5.46 m bgl respectively. The depth to water levels maps for pre and post monsoon period

(2014) are shown in Fig 5 & 6 respectively. The decadal mean water level trend during post monsoon is depicted in the Fig.7.

8. DYNAMIC GROUND WATER RESOURCES

The Ground water availability, Utilization and stage of Development in Giddaluru Mandal Prakasham District is given in Table-1.

Table-1: Ground water resources of Giddaluru mandal, Prakasham district.

Annual Replenishable Ground water resources (MCM)	16.74
Net Annual Ground Water Availability(MCM)/yr	15.07
Net Annual Ground Water Draft(MCM)/yr	16.45
Projected Demand for Domestic and Industrial use up to 2025. (MCM)	0.46
Stage of Ground water development (%).	109
Whether notified or not with year of notification.	No

9. NEED FOR ARTIFICIAL RECHARGE AND CONSERVATION METHODS

The ground water withdrawal is more than the recharge with a stage of development above hundred percent. The long term water level trend mostly shows a declining trend and the water levels are very deep ranging up to 30 m. The sustainability of bore wells has become questionable as many bore wells are either drying up or have recorded reduced yields. There is no surface water irrigation facility in the area. All these factors indicate that there is an urgent need for artificial recharge and water conservation in the Mandal.

10. JUSTIFICATION OF THE ARTIFICIAL RECHARGE PROJECT

Giddaluru Mandal falls under high stage of ground water development i.e., 109 % and with sufficient amount of uncommitted surface runoff. The area is completely dependent on ground water for domestic, industrial and irrigation purposes. During the monsoons runoff quickly flows out of the area without natural recharge to ground water. It is necessary to apply artificial recharge techniques to allow more and more recharge through check dams, PTs, MPTs, farm ponds, recharge shafts to cope up with the withdrawal pattern and also to improve ground water situation through various interventions including on farm activities and micro irrigation systems (Sprinkler-Drip-HDPE).

11. AVAILABILITY OF SURPLUS, SURFACE WATER FOR ARTIFICIAL RECAHRGE OR CONSERVATION

The runoff was calculated by taking into account of normal rainfall of the mandal and corresponding runoff yield from Strangers table. The existing storage created by various artificial recharge structures constructed by the State Government, if any, was deducted for calculating the runoff yield to recommend new AR structures.

.

Total Geographical area (Sq.kms)	861
Hilly Area (Sq.kms)	378.31
Area suitable for Artificial Recharge (sq.km.)	482.69
Runoff Yield in MC MCM/yr. M	48.06
Existing No. of Check Dams	137
Storage created MCM/yr.	0.97
Existing No. of Percolation Tanks	111
Storage created MCM/yr.	0.79
Total Existing Storage Created	1.76

12. FEASIBLE ARTIFICIAL RECHARGE STRUCTURES

Since the mandal is categorized as over exploited, there is an immediate need for improving ground water scenario and to ensure sustainability of ground water sources. It is also suggested to create additional storage capacity of surface water bodies which would result in supplementing irrigation thereby reducing the ground water draft. The run off available in the mandal has been assessed as 46.3 MCM/yr, which could be considered for further planning of artificial recharge. However, the number of artificial recharge structures feasible has been recommended in areas, by considering the utilizable yield, number of existing structures, land use, drainage pattern and also where the post monsoon water levels (decadal mean) are more than 5 m bgl., and or decadal trends are either falling or showing insignificant raising trend.

A) Check dams and Percolation Tanks

The area is covered by seasonal nalas – drains, which carry discharge during monsoon period debauched into the water bodies within a short duration. It is proposed to identify such nalas for construction of check dams/Percolation tank with recharge shafts, so as to harness ground water and to increase soil moisture content.

- The site selected for check dam/Percolation Tank should have sufficient thickness of permeable soils or weathered material to facilitate recharge of stored water within a short span of time. The water stored in these structures is mostly confined to the stream course and height is normally less than 2m.

- These are designed based on stream width and excess water is allowed to flow over the crest wall. In order to avoid scouring from excess runoff water cushions are provided on the downstream side. To harness maximum runoff in the stream, a series of such check dams can be constructed to have recharge on a regional scale.

- Considering the annual monsoon rainfall of 636 mm, sufficient rain water can be harnessed. This will improve ground water regime as well as delaying the instant flow into the main river.

- The flow in these seasonal rivers can be sustained up to about 2 to 3 months after monsoon.

- Recharge trenches can also be constructed along upstream side of the check dam/Percolation Tank in the impoundment area for enhancing the ground water recharge rate.

Thus, a total of 168 **Check dams and 67 Percolation tanks** are recommended.

B). Recharge Shafts

The existing check dams and percolation tanks lose their storage capacity as well as recharge capacity due to siltation. Hence, Recharge shafts are recommended in the existing Check dams and Percolation tanks to enhance the ground water recharge. During the heavy downpours, there will be sufficient accumulation of runoff, which can also effectively be utilized for recharge by constructing recharge shafts. Hence, it is proposed to construct 69 and 56 recharge shafts of 165 mm dia with 30 m depth in the existing check dams and percolation tanks respectively.

C). Farm Ponds

A farm pond is a large dug out in the earth, usually square or rectangular in shape, which harvests rain water and stores it for future use. It has an inlet to regulate inflow and an outlet to discharge excess water. The pond is surrounded by a small bund, which prevents erosion on the banks of the pond. The size and depth depend on the amount of land available; the type of soil water from the farm pond is conveyed to the fields manually, by pumping, or by both methods.

Advantages of Farm Ponds

- They provide water to start growing crops, without waiting for rain to fall.
- They provide irrigation water during dry spells between rainfalls. This increases the yield, the number of crops in one year, and the diversity of crops that can be grown.
- Bunds can be used to raise vegetables and fruit trees, thus supplying the farm household with an additional source of income and of nutritious food.
- Farmers are able to apply adequate farm inputs and perform farming operations at the appropriate time, thus increasing their productivity and their confidence in farming.
- They check soil erosion and minimize siltation of waterways and reservoirs.
- They supplies water for domestic purposes and livestock.
- They promote fish rearing.
- They recharge the ground water.
- They improve drainage.
- The excavated earth has a very high value and can be used to enrich soil in the fields, levelling land, and constructing farm roads.

As per the Land use classification, majority of the area is covered by the agricultural field. Hence, it is proposed to construct 440 farm ponds in 22 villages of the Mandal @ 20 farm ponds in each village.

D). Micro Irrigation System (Sprinkler /drip/HDPE pipes)

Micro irrigation is defined as the frequent application of small quantities of water directly above and below the soil surface; usually as discrete drops, continuous drops or tiny streams through emitters placed along a water delivery line.

In flood/furrow irrigation method more than 50% of applied water is wasted through seepage to deeper level, localized inundation causes loss through evaporation and it leaches out the nutrients from the plant. While through drip & sprinkler irrigation wastages of irrigational water could be minimized. The studies on different crops, has revealed that irrigation water is saved drastically. The conveyance losses (mainly seepage & evaporation) can be saved up to 25 to 40% through utilization of HDPE pipes. Initially the scheme is proposed to be implemented in worst affected areas showing deepest water levels and significant declining trends. It is proposed to take up micro irrigation system in 2200 ha @ 100 ha per village.

13. TENTATIVE COST ESTIMATES

S.No.	Feasible Artificial Recharge & Water Conservation structures/	No. of Structures/ Quantity	Total Volume (MCM)	Tentative unit cost (in Rs lakh)	Total tentative cost (in Rs Lakh)	Expected Annual GW recharge/savings (MCM)
1	Proposed Masonry Check dams Crest Length -10-15 m, Height-1-2 m) (0.007 MCM*4 fillings)	168	4.704	5	840	3.528
2	Recharge shaft in Check dam (50% of the existing Check dams)	69	0.759	0.5	34.5	0.759
3	Proposed Percolation Tanks (100*100*2.5)* 4 fillings)	67	6.7	15	1005	5.025
4	Renovation Desilting, Repairs and installation of Recharge Shafts in existing PTS (50% of the existing PTS)	56	0.616	1	56	0.616
5	Proposed Farm Pond (6 filling) 5*5*1.5 dimension @ 20 farm ponds per each village	440	0.06336	0.25	110	0.057024
6	Proposed Sprinkler/drip/HDPE pipes for 100 ha in each village	2200	13.2	0.6	1320	6.6
7	Proposed Piezometers up to 50 mbgl @ one PZ per Village	22	0	0.6	13.2	0
8 (i)	Total (No. of AR Structures)	822	12.84		2058.7	9.985
8 (ii)	Total (ha)	2200			1320	6.6
	Total (8(i) + 8 (ii))				**3378.7**	**16.585**
9	Impact Assessment & O & M -5 % of Total cost of the Scheme				**168.935**	
	Grand Total				**3547.635**	

*(Expected annual GW Recharge/Savings MCM - CDS& PTS: 75%, Farm ponds - 90%, Sprinklers-50%, Recharge shafts in existing CDS and PTS-100%)

Note: The type, number and cost of structure may vary according to site, after the ground truth verification.

14. TIME SCHEDULE

Steps	Quarters							
	1st	2nd	3rd	4th	5th	6th	7th	8th
Identification of line department/implementing agency and preparation of DPR								
Approval of Scheme and releases of sanction of funds								
Implementation of ARS								

Phase = one quarter or 3 months or equivalent to financial quarter

A). Operation and Maintenance

In all projects impact assessment has to be carried out to ensure that project is economically viable, socially equitable and environmentally sustainable by inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. Accordingly it is proposed to have impact assessment as well as operation & Maintenance at the rate of 5% of the total cost of the project for 5 years from the completion of artificial recharge project.

B). Expected Benefits

The benefits of the project are:

1. The implementation of the project would result in additional recharge/Ground water savings to the tune of 16.58 MCM.
2. Ground water recharge will help in arresting the rapid decline in ground water resources and will also ensure improvement in quality of ground water by dilution.
3. Proposed structures and measures will also enhance the ground water potential and would ensure sustainability of ground water resources. It is estimated that the stage of ground water development may likely to be reduced from the present 109% to 47% (62%)
4. It will also help in controlling soil erosion.

Acknowledgements

The data received from the Director Ground Water Department Andhra Pradesh in respect of the basic inputs is duly acknowledged. The information on existing Artificial Recharge Structures have been taken from the EMUSTER, Department of Rural Development, Government of AP.

EXISTING ARTIFICIAL RECHARGE STRUCTURES
GIDDALURU MANDAL, PRAKASAM DISTRICT, AP.

S.no	Gram Panchayat	Habitation	Structure Type	Longitude	Latitude	Scheme
1	Ambavaram	Ambavaram	Check Dam	78.8997	15.3944	NREGS
2	Ambavaram	Ambavaram	Check Dam	78.9025	15.3871	NREGS
3	Narava	Narava	Check Dam	78.9510	15.3616	NREGS
4	Narava	Narava	Check Dam	78.9434	15.3451	NREGS
5	Jayaramapuram	Jayaramapuram	Check Dam	78.8825	15.4221	NREGS
6	Jayaramapuram	Jayaramapuram	Check Dam	78.8805	15.4230	NREGS
7	Jayaramapuram	Jayaramapuram	Check Dam	78.8789	15.4234	NREGS
8	Jayaramapuram	Jayaramapuram	Check Dam	78.8774	15.4226	NREGS
9	Jayaramapuram	Jayaramapuram	Check Dam	78.8840	15.4244	NREGS
10	Jayaramapuram	Jayaramapuram	Check Dam	78.8724	15.4214	NREGS
11	Jayaramapuram	Jayaramapuram	Check Dam	78.8702	15.4214	NREGS
12	Kothakota	Kothakota	Check Dam	78.8465	15.3290	NREGS
13	Kothakota	Kothakota	Check Dam	78.8438	15.3290	NREGS
14	Kothakota	Kothakota	Check Dam	78.8427	15.3300	NREGS
15	Kothakota	Kothakota	Check Dam	78.8511	15.3256	NREGS
16	Kothakota	Kothakota	Check Dam	78.8534	15.3244	NREGS
17	Kothakota	Kothakota	Check Dam	78.8534	15.3244	NREGS
18	Kothakota	Kothakota	Check Dam	78.8546	15.3229	NREGS
19	Kothakota	Kothakota	Check Dam	78.8616	15.3226	NREGS
20	Kothakota	Thallapalli	Check Dam	78.8878	15.3236	NREGS
21	Adimurthy palli	Jammulapalli	Check Dam	78.8880	15.1932	NREGS
22	Adimurthy palli	Jammulapalli	Check Dam	78.8860	15.1951	NREGS
23	Obulapuram	Doddampalli	Check Dam	78.8973	15.3025	NREGS
24	Obulapuram	Doddampalli	Check Dam	78.8973	15.3025	NREGS
25	Obulapuram	Doddampalli	Check Dam	78.8755	15.3118	NREGS
26	Obulapuram	Obulapuram	Check Dam	78.8670	15.2950	NREGS
27	Obulapuram	Obulapuram	Check Dam	78.8670	15.2950	NREGS
28	Obulapuram	Obulapuram Thanda	Check Dam	78.8608	15.2822	NREGS
29	Obulapuram	Obulapuram Thanda	Check Dam	78.8648	15.2811	NREGS
30	Obulapuram	Obulapuram Thanda	Check Dam	78.8703	15.2776	NREGS
31	Obulapuram	Obulapuram Thanda	Check Dam	78.8657	15.2809	NREGS
32	Sanjeevarao peta	Danthara Palli	Check Dam	78.8859	15.2677	NREGS
33	Sanjeevarao peta	Danthara Palli	Check Dam	78.8875	15.2801	NREGS

34	Sanjeevarao peta	Danthara Palli	Check Dam	78.8703	15.2776	NREGS
35	Sanjeevarao peta	Danthara Palli	Check Dam	78.8736	15.2774	NREGS
36	Sanjeevarao peta	Danthara Palli	Check Dam	78.8754	15.2779	NREGS
37	Sanjeevarao peta	Sanjeevarao Peta	Check Dam	78.8979	15.2788	NREGS
38	Sanjeevarao peta	Sanjeevarao Peta	Check Dam	78.8861	15.2810	NREGS
39	Sanjeevarao peta	Sanjeevarao Peta	Check Dam	78.8901	15.2807	NREGS
40	Sanjeevarao peta	Sanjeevarao Peta	Check Dam	78.8901	15.2807	NREGS
41	Kanchi palli	Kanchi Palli	Check Dam	78.8681	15.3609	NREGS
42	Kanchi palli	Kanchi Palli	Check Dam	78.8774	15.3643	NREGS
43	Kanchi palli	Kanchi Palli	Check Dam	78.8822	15.3652	NREGS
44	Kommunuru	Brahmanapalli	Check Dam	78.9301	15.3194	NREGS
45	Kommunuru	Kommunuru	Check Dam	78.9149	15.3092	NREGS
46	Kommunuru	Nallagatla	Check Dam	78.9144	15.3086	NREGS
47	Kommunuru	Vemulapadu	Check Dam	78.9325	15.2969	NREGS
48	Gadikota	Devanagaram	Check Dam	78.8753	15.2447	NREGS
49	Gadikota	Devanagaram	Check Dam	78.8910	15.2642	NREGS
50	Gadikota	Devanagaram	Check Dam	78.8939	15.2633	NREGS
51	Gadikota	Gadikota	Check Dam	78.9202	15.2636	NREGS
52	Gadikota	Gadikota	Check Dam	78.9202	15.2698	NREGS
53	Gadikota	Gadikota	Check Dam	78.9171	15.2577	NREGS
54	Gadikota	Gadikota	Check Dam	78.9215	15.2613	NREGS
55	Gadikota	Gadikota	Check Dam	78.9103	15.2582	NREGS
56	Gadikota	Gadikota	Check Dam	78.9110	15.2567	NREGS
57	Gadikota	Gadikota	Check Dam	78.9078	15.2575	NREGS
58	Gadikota	Gadikota	Check Dam	78.9025	15.2634	NREGS
59	Gadikota	Gadikota	Check Dam	78.9039	15.2601	NREGS
60	Gadikota	Gadikota	Check Dam	78.8921	15.2703	NREGS
61	Gadikota	Thummalapalli	Check Dam	78.9190	15.2474	NREGS
62	Mundla padu	Burujupalli Thanda	Check Dam	78.8510	15.3257	NREGS
63	Mundla padu	Burujupalli Thanda	Check Dam	78.8534	15.3243	NREGS
64	Mundla padu	Burujupalli Thanda	Check Dam	78.8479	15.3267	NREGS
65	Mundla padu	Burujupalli Thanda	Check Dam	78.8457	15.3259	NREGS
66	Mundla padu	Burujupalli Thanda	Check Dam	78.8428	15.3298	NREGS
67	Mundla padu	Burujupalli Thanda	Check Dam	78.8518	15.3280	NREGS
68	Mundla padu	Burujupalli Thanda	Check Dam	78.8436	15.3291	NREGS
69	Mundla padu	Burujupalli Thanda	Check Dam	78.8464	15.3289	NREGS

70	Mundla padu	Burujupalli Thanda	Check Dam	78.8535	15.3275	NREGS
71	Mundla padu	Burujupalli Thanda	Check Dam	78.8508	15.3210	NREGS
72	Mundla padu	Mundla Padu	Check Dam	78.9132	15.3124	NREGS
73	Mundla padu	Mundla Padu	Check Dam	78.8921	15.3343	NREGS
74	Mundla padu	Mundla Padu	Check Dam	78.8883	15.3255	NREGS
75	Mundla padu	Mundla Padu	Check Dam	78.8893	15.3407	NREGS
76	Mundla padu	Mundla Padu	Check Dam	78.8887	15.3373	NREGS
77	Vuyyala wada	Ankalamma Palli	Check Dam	78.8821	15.2169	NREGS
78	Vuyyala wada	Ankalamma Palli	Check Dam	78.8712	15.2161	NREGS
79	Vuyyala wada	Ankalamma Palli	Check Dam	78.8794	15.2145	NREGS
80	Vuyyala wada	Ankalamma Palli	Check Dam	78.8768	15.2148	NREGS
81	Vuyyala wada	Lingapuram	Check Dam	78.8824	15.2371	NREGS
82	Vuyyala wada	Lingapuram	Check Dam	78.8815	15.2377	NREGS
83	Vuyyala wada	Lingapuram	Check Dam	78.8839	15.2373	NREGS
84	Vuyyala wada	Surepalli	Check Dam	78.9004	15.2370	NREGS
85	Vuyyala wada	Surepalli	Check Dam	78.8949	15.2428	NREGS
86	Vuyyala wada	Vuyyalawada	Check Dam	78.8816	15.2159	NREGS
87	Krishnam setty palli	Diguvametta	Check Dam	78.8375	15.3960	NREGS
88	Krishnam setty palli	Diguvametta	Check Dam	78.8384	15.3956	NREGS
89	Krishnam setty palli	Diguvametta Thanda	Check Dam	78.8414	15.3930	NREGS
90	Krishnam setty palli	Krishnam Setty Palli	Check Dam	78.8523	15.3867	NREGS
91	Krishnam setty palli	Uppalapadu	Check Dam	78.8582	15.3951	NREGS
92	Krishnam setty palli	Uppalapadu	Check Dam	78.8583	15.3994	NREGS
93	Krishnam setty palli	Uppalapadu	Check Dam	78.8560	15.3983	NREGS
94	Krishnam setty palli	Uppalapadu	Check Dam	78.8780	15.3826	NREGS
95	Ambavaram	Ambavaram	Check Dam	78.8997	15.3944	IWMP
96	Ambavaram	Ambavaram	Check Dam	78.9025	15.3871	IWMP
97	Jayaramapuram	Jayaramapuram	Check Dam	78.8825	15.4221	IWMP
98	Jayaramapuram	Jayaramapuram	Check Dam	78.8805	15.4230	IWMP
99	Jayaramapuram	Jayaramapuram	Check Dam	78.8789	15.4234	IWMP
100	Jayaramapuram	Jayaramapuram	Check Dam	78.8774	15.4226	IWMP
101	Jayaramapuram	Jayaramapuram	Check Dam	78.8840	15.4244	IWMP
102	Jayaramapuram	Jayaramapuram	Check Dam	78.8724	15.4214	IWMP
103	Jayaramapuram	Jayaramapuram	Check Dam	78.8702	15.4214	IWMP
104	Kanchi palli	Kanchi Palli	Check Dam	78.8681	15.3609	IWMP
105	Kanchi palli	Kanchi Palli	Check Dam	78.8774	15.3643	IWMP

106	Kanchi palli	Kanchi Palli	Check Dam	78.8822	15.3652	IWMP
107	Mundla padu	Burujupalli Thanda	Check Dam	78.8510	15.3257	IWMP
108	Mundla padu	Burujupalli Thanda	Check Dam	78.8534	15.3243	IWMP
109	Mundla padu	Burujupalli Thanda	Check Dam	78.8479	15.3267	IWMP
110	Mundla padu	Burujupalli Thanda	Check Dam	78.8457	15.3259	IWMP
111	Mundla padu	Burujupalli Thanda	Check Dam	78.8428	15.3298	IWMP
112	Mundla padu	Burujupalli Thanda	Check Dam	78.8518	15.3280	IWMP
113	Mundla padu	Burujupalli Thanda	Check Dam	78.8436	15.3291	IWMP
114	Mundla padu	Burujupalli Thanda	Check Dam	78.8464	15.3289	IWMP
115	Mundla padu	Burujupalli Thanda	Check Dam	78.8535	15.3275	IWMP
116	Mundla padu	Burujupalli Thanda	Check Dam	78.8508	15.3210	IWMP
117	Mundla padu	Mundla Padu	Check Dam	78.9132	15.3124	IWMP
118	Mundla padu	Mundla Padu	Check Dam	78.9133	15.3147	IWMP
119	Mundla padu	Mundla Padu	Check Dam	78.8921	15.3343	IWMP
120	Mundla padu	Mundla Padu	Check Dam	78.8883	15.3255	IWMP
121	Mundla padu	Mundla Padu	Check Dam	78.8893	15.3407	IWMP
122	Mundla padu	Mundla Padu	Check Dam	78.8887	15.3373	IWMP
123	Krishnam setty palli	Diguvametta	Check Dam	78.8375	15.3960	IWMP
124	Krishnam setty palli	Diguvametta	Check Dam	78.8384	15.3956	IWMP
125	Krishnam setty palli	Diguvametta Thanda	Check Dam	78.8414	15.3930	IWMP
126	Krishnam setty palli	Krishnam Setty Palli	Check Dam	78.8523	15.3867	IWMP
127	Krishnam setty palli	Uppalapadu	Check Dam	78.8582	15.3951	IWMP
128	Krishnam setty palli	Uppalapadu	Check Dam	78.8583	15.3994	IWMP
129	Krishnam setty palli	Uppalapadu	Check Dam	78.8560	15.3983	IWMP
130	Krishnam setty palli	Uppalapadu	Check Dam	78.8780	15.3826	IWMP
131	Adimurthy palli	Adimurthy Palli	Check Wall	78.8970	15.2025	NREGS
132	Adimurthy palli	Adimurthy Palli	Check Wall	78.8975	15.2008	NREGS
133	Adimurthy palli	Adimurthy Palli	Check Wall	78.8980	15.1969	NREGS
134	Sanjeevarao peta	Danthara Palli	Check Wall	78.8922	15.2703	NREGS
135	Sanjeevarao peta	Danthara Palli	Check Wall	78.8844	15.2807	NREGS
136	Sanjeevarao peta	Danthara Palli	Check Wall	78.8783	15.2757	NREGS
137	Sanjeevarao peta	Danthara Palli	Check Wall	78.8783	15.2757	NREGS
138	Ambavaram	Ambavaram	MPT	78.8992	15.3948	NREGS
139	Ambavaram	Ambavaram	MPT	78.9025	15.3865	NREGS
140	Thimma puram	Thimma Puram	MPT	78.9556	15.4028	NREGS
141	Thamballa palli	Thripura Puram	MPT	78.9852	15.3674	NREGS

142	Narava	Naravaboyana Palli	MPT	78.9251	15.3334	NREGS
143	Narava	Naravaboyana Palli	MPT	78.9248	15.3338	NREGS
144	Narava	Naravaboyana Palli	MPT	78.9236	15.3353	NREGS
145	Jayaramapuram	Jayaramapuram	MPT	78.8773	15.4251	NREGS
146	Jayaramapuram	Jayaramapuram	MPT	78.8653	15.4254	NREGS
147	Jayaramapuram	Jayaramapuram	MPT	78.8736	15.4291	NREGS
148	Kothakota	Kothakota	MPT	78.8522	15.3314	NREGS
149	Kothakota	Kothakota	MPT	78.8443	15.3305	NREGS
150	Kothakota	Thallapalli	MPT	78.8845	15.3179	NREGS
151	Adimurthy palli	Jammulapalli	MPT	78.8930	15.1971	NREGS
152	Adimurthy palli	Jammulapalli	MPT	78.8785	15.2042	NREGS
153	Obulapuram	Obulapuram	MPT	78.8689	15.3068	NREGS
154	Obulapuram	Obulapuram	MPT	78.8679	15.2996	NREGS
155	Obulapuram	Obulapuram	MPT	78.8668	15.2969	NREGS
156	Podili konda palle	Podili Konda Palle	MPT	78.9581	15.3656	NREGS
157	Podili konda palle	Podili Konda Palle	MPT	78.9668	15.3578	NREGS
158	Sanjeevarao peta	Ankireddy Palli	MPT	78.9096	15.2802	NREGS
159	Sanjeevarao peta	Ankireddy Palli	MPT	78.9096	15.2802	NREGS
160	Sanjeevarao peta	Danthara Palli	MPT	78.8778	15.2802	NREGS
161	Sanjeevarao peta	Danthara Palli	MPT	78.8793	15.2791	NREGS
162	Sanjeevarao peta	Sanjeevarao Peta	MPT	78.8903	15.2820	NREGS
163	Sanjeevarao peta	Sanjeevarao Peta	MPT	78.8932	15.2867	NREGS
164	Kommunuru	Kommunuru	MPT	78.9153	15.3100	NREGS
165	Kommunuru	Vemulapadu	MPT	78.9300	15.2991	NREGS
166	Kommunuru	Vemulapadu	MPT	78.9300	15.2991	NREGS
167	Kommunuru	Vemulapadu	MPT	78.9152	15.3057	NREGS
168	Kommunuru	Yeggannapalli	MPT	78.9133	15.3088	NREGS
169	Gadikota	Devanagaram	MPT	78.8878	15.2626	NREGS
170	Gadikota	Devanagaram	MPT	78.8931	15.2642	NREGS
171	Gadikota	Gadikota	MPT	78.9027	15.2580	NREGS
172	Gadikota	Gadikota	MPT	78.9009	15.2605	NREGS
173	Gadikota	Thummalapalli	MPT	78.9159	15.2461	NREGS
174	Mundla padu	Mundla Padu	MPT	78.9142	15.3185	NREGS
175	Mundla padu	Mundla Padu	MPT	78.9198	15.3339	NREGS
176	Vuyyala wada	Ankalamma Palli	MPT	78.8927	15.2249	NREGS
177	Vuyyala wada	Singampalli	MPT	78.8825	15.2294	NREGS

178	Krishnam setty palli	Diguvametta	MPT	78.8365	15.3976	NREGS
179	Ambavaram	Ambavaram	MPT	78.8992	15.3948	IWMP
180	Ambavaram	Ambavaram	MPT	78.9025	15.3865	IWMP
181	Jayaramapuram	Jayaramapuram	MPT	78.8773	15.4251	IWMP
182	Jayaramapuram	Jayaramapuram	MPT	78.8653	15.4254	IWMP
183	Jayaramapuram	Jayaramapuram	MPT	78.8736	15.4291	IWMP
184	Mundla padu	Mundla Padu	MPT	78.9142	15.3185	IWMP
185	Mundla padu	Mundla Padu	MPT	78.9198	15.3339	IWMP
186	Krishnam setty palli	Diguvametta	MPT	78.8365	15.3976	IWMP
187	Ambavaram	Ambavaram	PT	78.8713	15.4042	NREGS
188	Ambavaram	Ambavaram	PT	78.8914	15.4128	NREGS
189	Ambavaram	Ambavaram	PT	78.9014	15.3871	NREGS
190	Thimma puram	Thimma Puram	PT	78.9584	15.4150	NREGS
191	Thimma puram	Thimma Puram	PT	78.9584	15.4150	NREGS
192	Thimma puram	Thimma Puram	PT	78.9428	15.4138	NREGS
193	Thimma puram	Thimma Puram	PT	78.9380	15.4020	NREGS
194	Vellupalli	Vellupalli	PT	78.8745	15.4144	NREGS
195	Vellupalli	Vengalareddy Palli	PT	78.8749	15.4148	NREGS
196	Vellupalli	Vengalareddy Palli	PT	78.8753	15.4143	NREGS
197	Narava	Narava	PT	78.9571	15.3549	NREGS
198	Narava	Narava	PT	78.9622	15.3539	NREGS
199	Narava	Narava	PT	78.9473	15.3452	NREGS
200	Narava	Naravaboyana Palli	PT	78.9213	15.3362	NREGS
201	Jayaramapuram	Jayaramapuram	PT	78.8772	15.4240	NREGS
202	Jayaramapuram	Jayaramapuram	PT	78.8724	15.4303	NREGS
203	Jayaramapuram	Jayaramapuram	PT	78.8766	15.4256	NREGS
204	Jayaramapuram	Jayaramapuram	PT	78.8739	15.4225	NREGS
205	Kongala veedu	Chandrareddy Palli	PT	78.9388	15.3634	NREGS
206	Kongala veedu	Kongalaveedu	PT	78.9398	15.3641	NREGS
207	Kongala veedu	Kongalaveedu	PT	78.9394	15.3636	NREGS
208	Kothakota	Kothakota	PT	78.8478	15.3114	NREGS
209	Obulapuram	Doddampalli	PT	78.8772	15.3120	NREGS
210	Obulapuram	Obulapuram	PT	78.8656	15.2972	NREGS
211	Obulapuram	Obulapuram	PT	78.8687	15.2959	NREGS
212	Obulapuram	Obulapuram	PT	78.8737	15.2903	NREGS
213	Sanjeevarao peta	Sanjeevarao Peta	PT	78.8905	15.2865	NREGS

214	Kanchi palli	Kanchi Palli	PT	78.8766	15.3646	NREGS
215	Kommunuru	Brahmanapalli	PT	78.9241	15.3237	NREGS
216	Kommunuru	Kommunuru	PT	78.9139	15.3079	NREGS
217	Kommunuru	Kommunuru	PT	78.9128	15.3081	NREGS
218	Kommunuru	Vemulapadu	PT	78.9173	15.3045	NREGS
219	Gadikota	Devanagaram	PT	78.8944	15.2437	NREGS
220	Gadikota	Devanagaram	PT	78.8866	15.2476	NREGS
221	Mundla padu	Burujupalli	PT	78.8481	15.3400	NREGS
222	Mundla padu	Burujupalli Thanda	PT	78.8407	15.3328	NREGS
223	Mundla padu	Burujupalli Thanda	PT	78.8420	15.3299	NREGS
224	Mundla padu	Mundla Padu	PT	78.9142	15.3163	NREGS
225	Mundla padu	Mundla Padu	PT	78.9078	15.3254	NREGS
226	Mundla padu	Mundla Padu	PT	78.9078	15.3254	NREGS
227	Mundla padu	Mundla Padu	PT	78.8864	15.3286	NREGS
228	Mundla padu	Mundla Padu	PT	78.8899	15.3436	NREGS
229	Vuyyala wada	Ankalamma Palli	PT	78.8710	15.2167	NREGS
230	Krishnam setty palli	Pedda Cheruvu	PT	78.8508	15.3715	NREGS
231	Ambavaram	Ambavaram	PT	78.8713	15.4042	IWMP
232	Ambavaram	Ambavaram	PT	78.8914	15.4128	IWMP
233	Ambavaram	Ambavaram	PT	78.9014	15.3871	IWMP
234	Vellupalli	Vellupalli	PT	78.8745	15.4144	IWMP
235	Vellupalli	Vengalareddy Palli	PT	78.8749	15.4148	IWMP
236	Vellupalli	Vengalareddy Palli	PT	78.8753	15.4143	IWMP
237	Jayaramapuram	Jayaramapuram	PT	78.8772	15.4240	IWMP
238	Jayaramapuram	Jayaramapuram	PT	78.8724	15.4303	IWMP
239	Jayaramapuram	Jayaramapuram	PT	78.8766	15.4256	IWMP
240	Jayaramapuram	Jayaramapuram	PT	78.8739	15.4225	IWMP
241	Kanchi palli	Kanchi Palli	PT	78.8766	15.3646	IWMP
242	Mundla padu	Burujupalli	PT	78.8481	15.3400	IWMP
243	Mundla padu	Burujupalli Thanda	PT	78.8407	15.3328	IWMP
244	Mundla padu	Burujupalli Thanda	PT	78.8420	15.3299	IWMP
245	Mundla padu	Mundla Padu	PT	78.9142	15.3163	IWMP
246	Mundla padu	Mundla Padu	PT	78.9078	15.3254	IWMP
247	Mundla padu	Mundla Padu	PT	78.8864	15.3286	IWMP
248	Mundla padu	Mundla Padu	PT	78.8899	15.3436	IWMP

PROPOSED ARTIFICIAL RECHARGE STRUCTURES
GIDDALURU MANDAL, PRAKASAM DISTRICT, AP.

S.No.	Mandal	Lattitude	Longitude	Structuretype
1	Giddaluru	15.5287	78.8557	Checkdam
2	Giddaluru	15.4939	78.8435	Checkdam
3	Giddaluru	15.4721	78.8678	Checkdam
4	Giddaluru	15.4710	78.8732	Checkdam
5	Giddaluru	15.4808	78.8913	Checkdam
6	Giddaluru	15.4957	78.8952	Checkdam
7	Giddaluru	15.5043	78.8974	Checkdam
8	Giddaluru	15.5179	78.8851	Checkdam
9	Giddaluru	15.5071	78.8724	Checkdam
10	Giddaluru	15.5214	78.8734	Checkdam
11	Giddaluru	15.5255	78.8970	Checkdam
12	Giddaluru	15.4998	78.8864	Checkdam
13	Giddaluru	15.4873	78.8734	Checkdam
14	Giddaluru	15.4741	78.8809	Checkdam
15	Giddaluru	15.4816	78.8581	Checkdam
16	Giddaluru	15.5314	78.8455	Checkdam
17	Giddaluru	15.5028	78.8565	Checkdam
18	Giddaluru	15.4312	78.8534	Checkdam
19	Giddaluru	15.4628	78.8463	Checkdam
20	Giddaluru	15.4654	78.8554	Checkdam
21	Giddaluru	15.4585	78.8654	Checkdam
22	Giddaluru	15.4540	78.8865	Checkdam
23	Giddaluru	15.4450	78.9010	Checkdam
24	Giddaluru	15.4251	78.9293	Checkdam
25	Giddaluru	15.4625	78.9466	Checkdam
26	Giddaluru	15.4755	78.9198	Checkdam
27	Giddaluru	15.4622	78.9139	Checkdam
28	Giddaluru	15.4179	78.9200	Checkdam
29	Giddaluru	15.5340	78.8986	Checkdam
30	Giddaluru	15.5197	78.9033	Checkdam
31	Giddaluru	15.5086	78.8522	Checkdam

32	Giddaluru	15.4519	78.9027	Checkdam
33	Giddaluru	15.4030	78.9190	Checkdam
34	Giddaluru	15.5813	78.8866	Checkdam
35	Giddaluru	15.5390	78.8696	Checkdam
36	Giddaluru	15.5531	78.8703	Checkdam
37	Giddaluru	15.5627	78.8594	Checkdam
38	Giddaluru	15.5621	78.8529	Checkdam
39	Giddaluru	15.5733	78.8502	Checkdam
40	Giddaluru	15.5890	78.8404	Checkdam
41	Giddaluru	15.5897	78.8629	Checkdam
42	Giddaluru	15.5988	78.8995	Checkdam
43	Giddaluru	15.5601	78.8845	Checkdam
44	Giddaluru	15.5480	78.8863	Checkdam
45	Giddaluru	15.5441	78.8849	Checkdam
46	Giddaluru	15.5383	78.8875	Checkdam
47	Giddaluru	15.5672	78.8798	Checkdam
48	Giddaluru	15.5388	78.8420	Checkdam
49	Giddaluru	15.3595	78.7759	Checkdam
50	Giddaluru	15.4320	78.7883	Checkdam
51	Giddaluru	15.4246	78.7878	Checkdam
52	Giddaluru	15.4166	78.7896	Checkdam
53	Giddaluru	15.4142	78.7967	Checkdam
54	Giddaluru	15.4074	78.8028	Checkdam
55	Giddaluru	15.4088	78.8104	Checkdam
56	Giddaluru	15.4160	78.8169	Checkdam
57	Giddaluru	15.4114	78.8246	Checkdam
58	Giddaluru	15.4222	78.8271	Checkdam
59	Giddaluru	15.4415	78.8312	Checkdam
60	Giddaluru	15.4386	78.7786	Checkdam
61	Giddaluru	15.4135	78.7786	Checkdam
62	Giddaluru	15.4060	78.7769	Checkdam
63	Giddaluru	15.3796	78.7780	Checkdam
64	Giddaluru	15.3602	78.7995	Checkdam
65	Giddaluru	15.3956	78.8125	Checkdam
66	Giddaluru	15.4132	78.8394	Checkdam

67	Giddaluru	15.4664	78.7781	Checkdam
68	Giddaluru	15.5280	78.7929	Checkdam
69	Giddaluru	15.5217	78.8043	Checkdam
70	Giddaluru	15.5066	78.8150	Checkdam
71	Giddaluru	15.5000	78.8159	Checkdam
72	Giddaluru	15.5107	78.8053	Checkdam
73	Giddaluru	15.5224	78.7898	Checkdam
74	Giddaluru	15.5002	78.8017	Checkdam
75	Giddaluru	15.4930	78.7932	Checkdam
76	Giddaluru	15.4818	78.7783	Checkdam
77	Giddaluru	15.5062	78.8295	Checkdam
78	Giddaluru	15.4847	78.8308	Checkdam
79	Giddaluru	15.4748	78.8326	Checkdam
80	Giddaluru	15.5304	78.7835	Checkdam
81	Giddaluru	15.5312	78.8182	Checkdam
82	Giddaluru	15.5185	78.8152	Checkdam
83	Giddaluru	15.4852	78.8154	Checkdam
84	Giddaluru	15.4717	78.8164	Checkdam
85	Giddaluru	15.4771	78.8042	Checkdam
86	Giddaluru	15.4535	78.7890	Checkdam
87	Giddaluru	15.4461	78.7919	Checkdam
88	Giddaluru	15.4483	78.8212	Checkdam
89	Giddaluru	15.5061	78.7766	Checkdam
90	Giddaluru	15.4626	78.7892	Checkdam
91	Giddaluru	15.4452	78.7811	Checkdam
92	Giddaluru	15.6047	78.7724	Checkdam
93	Giddaluru	15.5777	78.8138	Checkdam
94	Giddaluru	15.5892	78.8305	Checkdam
95	Giddaluru	15.5962	78.8188	Checkdam
96	Giddaluru	15.5673	78.7823	Checkdam
97	Giddaluru	15.5385	78.8073	Checkdam
98	Giddaluru	15.5707	78.8335	Checkdam
99	Giddaluru	15.5812	78.8345	Checkdam
100	Giddaluru	15.5813	78.7754	Checkdam
101	Giddaluru	15.5857	78.7813	Checkdam

102	Giddaluru	15.6037	78.7869	Checkdam
103	Giddaluru	15.6054	78.7979	Checkdam
104	Giddaluru	15.5540	78.7756	Checkdam
105	Giddaluru	15.5398	78.7945	Checkdam
106	Giddaluru	15.5493	78.8058	Checkdam
107	Giddaluru	15.5545	78.8080	Checkdam
108	Giddaluru	15.5733	78.8087	Checkdam
109	Giddaluru	15.5708	78.8133	Checkdam
110	Giddaluru	15.5889	78.8035	Checkdam
111	Giddaluru	15.5868	78.8120	Checkdam
112	Giddaluru	15.6022	78.8073	Checkdam
113	Giddaluru	15.5475	78.8220	Checkdam
114	Giddaluru	15.5560	78.8237	Checkdam
115	Giddaluru	15.5638	78.8242	Checkdam
116	Giddaluru	15.5709	78.8221	Checkdam
117	Giddaluru	15.2915	78.8228	Checkdam
118	Giddaluru	15.3499	78.7825	Checkdam
119	Giddaluru	15.3506	78.8078	Checkdam
120	Giddaluru	15.3431	78.7942	Checkdam
121	Giddaluru	15.3359	78.7940	Checkdam
122	Giddaluru	15.3262	78.7890	Checkdam
123	Giddaluru	15.3179	78.7819	Checkdam
124	Giddaluru	15.3110	78.7809	Checkdam
125	Giddaluru	15.3052	78.7798	Checkdam
126	Giddaluru	15.2975	78.7764	Checkdam
127	Giddaluru	15.2880	78.7657	Checkdam
128	Giddaluru	15.2786	78.7553	Checkdam
129	Giddaluru	15.3252	78.7643	Checkdam
130	Giddaluru	15.3572	78.7691	Checkdam
131	Giddaluru	15.3470	78.7641	Checkdam
132	Giddaluru	15.3320	78.7532	Checkdam
133	Giddaluru	15.3068	78.7661	Checkdam
134	Giddaluru	15.2863	78.7947	Checkdam
135	Giddaluru	15.2988	78.8040	Checkdam
136	Giddaluru	15.3088	78.8073	Checkdam

137	Giddaluru	15.3150	78.8257	Checkdam
138	Giddaluru	15.2792	78.8322	Checkdam
139	Giddaluru	15.2812	78.8388	Checkdam
140	Giddaluru	15.2920	78.8171	Checkdam
141	Giddaluru	15.3058	78.8184	Checkdam
142	Giddaluru	15.2937	78.7538	Checkdam
143	Giddaluru	15.3108	78.7593	Checkdam
144	Giddaluru	15.3008	78.8423	Checkdam
145	Giddaluru	15.3154	78.8055	Checkdam
146	Giddaluru	15.3627	78.7631	Checkdam
147	Giddaluru	15.2178	78.7987	Checkdam
148	Giddaluru	15.2737	78.7605	Checkdam
149	Giddaluru	15.2666	78.8392	Checkdam
150	Giddaluru	15.2514	78.8035	Checkdam
151	Giddaluru	15.2558	78.7677	Checkdam
152	Giddaluru	15.2652	78.7659	Checkdam
153	Giddaluru	15.2538	78.7564	Checkdam
154	Giddaluru	15.2403	78.7542	Checkdam
155	Giddaluru	15.2312	78.7543	Checkdam
156	Giddaluru	15.2174	78.7522	Checkdam
157	Giddaluru	15.2044	78.7486	Checkdam
158	Giddaluru	15.1989	78.7461	Checkdam
159	Giddaluru	15.1906	78.7476	Checkdam
160	Giddaluru	15.2159	78.7689	Checkdam
161	Giddaluru	15.2338	78.8099	Checkdam
162	Giddaluru	15.2411	78.8266	Checkdam
163	Giddaluru	15.2358	78.8488	Checkdam
164	Giddaluru	15.2678	78.8227	Checkdam
165	Giddaluru	15.2055	78.8164	Checkdam
166	Giddaluru	15.2657	78.8028	Checkdam
167	Giddaluru	15.2387	78.7965	Checkdam
168	Giddaluru	15.2250	78.7751	Checkdam
169	Giddaluru	15.4205	78.8866	Percolation Tank
170	Giddaluru	15.3782	78.9087	Percolation Tank
171	Giddaluru	15.3758	78.9183	Percolation Tank

172	Giddaluru	15.3522	78.9420	Percolation Tank
173	Giddaluru	15.3564	78.9216	Percolation Tank
174	Giddaluru	15.3492	78.7599	Percolation Tank
175	Giddaluru	15.3224	78.7454	Percolation Tank
176	Giddaluru	15.3104	78.7849	Percolation Tank
177	Giddaluru	15.2700	78.8174	Percolation Tank
178	Giddaluru	15.3173	78.8448	Percolation Tank
179	Giddaluru	15.3096	78.8630	Percolation Tank
180	Giddaluru	15.2898	78.8825	Percolation Tank
181	Giddaluru	15.2842	78.9150	Percolation Tank
182	Giddaluru	15.2178	78.9082	Percolation Tank
183	Giddaluru	15.2070	78.9068	Percolation Tank
184	Giddaluru	15.2138	78.9083	Percolation Tank
185	Giddaluru	15.2217	78.8544	Percolation Tank
186	Giddaluru	15.2200	78.8761	Percolation Tank
187	Giddaluru	15.2155	78.8532	Percolation Tank
188	Giddaluru	15.2068	78.8459	Percolation Tank
189	Giddaluru	15.2234	78.8424	Percolation Tank
190	Giddaluru	15.2200	78.8143	Percolation Tank
191	Giddaluru	15.2035	78.8393	Percolation Tank
192	Giddaluru	15.2349	78.7890	Percolation Tank
193	Giddaluru	15.2898	78.7982	Percolation Tank
194	Giddaluru	15.2808	78.8452	Percolation Tank
195	Giddaluru	15.2361	78.8538	Percolation Tank
196	Giddaluru	15.2238	78.8684	Percolation Tank
197	Giddaluru	15.2374	78.8405	Percolation Tank
198	Giddaluru	15.3268	78.8252	Percolation Tank
199	Giddaluru	15.3435	78.8360	Percolation Tank
200	Giddaluru	15.3452	78.8103	Percolation Tank
201	Giddaluru	15.2832	78.7693	Percolation Tank
202	Giddaluru	15.2747	78.8125	Percolation Tank
203	Giddaluru	15.2549	78.8107	Percolation Tank
204	Giddaluru	15.2300	78.8062	Percolation Tank
205	Giddaluru	15.2525	78.8726	Percolation Tank
206	Giddaluru	15.2476	78.8722	Percolation Tank

207	Giddaluru	15.2581	78.8661	Percolation Tank
208	Giddaluru	15.2551	78.8614	Percolation Tank
209	Giddaluru	15.2317	78.9044	Percolation Tank
210	Giddaluru	15.2502	78.8471	Percolation Tank
211	Giddaluru	15.2642	78.7761	Percolation Tank
212	Giddaluru	15.2323	78.7591	Percolation Tank
213	Giddaluru	15.2048	78.7544	Percolation Tank
214	Giddaluru	15.2136	78.8665	Percolation Tank
215	Giddaluru	15.2101	78.8855	Percolation Tank
216	Giddaluru	15.3230	78.7699	Percolation Tank
217	Giddaluru	15.4440	78.8309	Percolation Tank
218	Giddaluru	15.4610	78.8309	Percolation Tank
219	Giddaluru	15.3756	78.8925	Percolation Tank
220	Giddaluru	15.3260	78.9277	Percolation Tank
221	Giddaluru	15.3170	78.9361	Percolation Tank
222	Giddaluru	15.3045	78.9340	Percolation Tank
223	Giddaluru	15.3230	78.8992	Percolation Tank
224	Giddaluru	15.2059	78.7599	Percolation Tank
225	Giddaluru	15.2517	78.8080	Percolation Tank
226	Giddaluru	15.2532	78.8326	Percolation Tank
227	Giddaluru	15.3949	78.7959	Percolation Tank
228	Giddaluru	15.3938	78.7849	Percolation Tank
229	Giddaluru	15.3847	78.7669	Percolation Tank
230	Giddaluru	15.3553	78.7571	Percolation Tank
231	Giddaluru	15.5122	78.8311	Percolation Tank
232	Giddaluru	15.5847	78.8229	Percolation Tank
233	Giddaluru	15.4941	78.9379	Percolation Tank
234	Giddaluru	15.2813	78.7873	Percolation Tank
235	Giddaluru	15.2790	78.7478	Percolation Tank

Fig.1

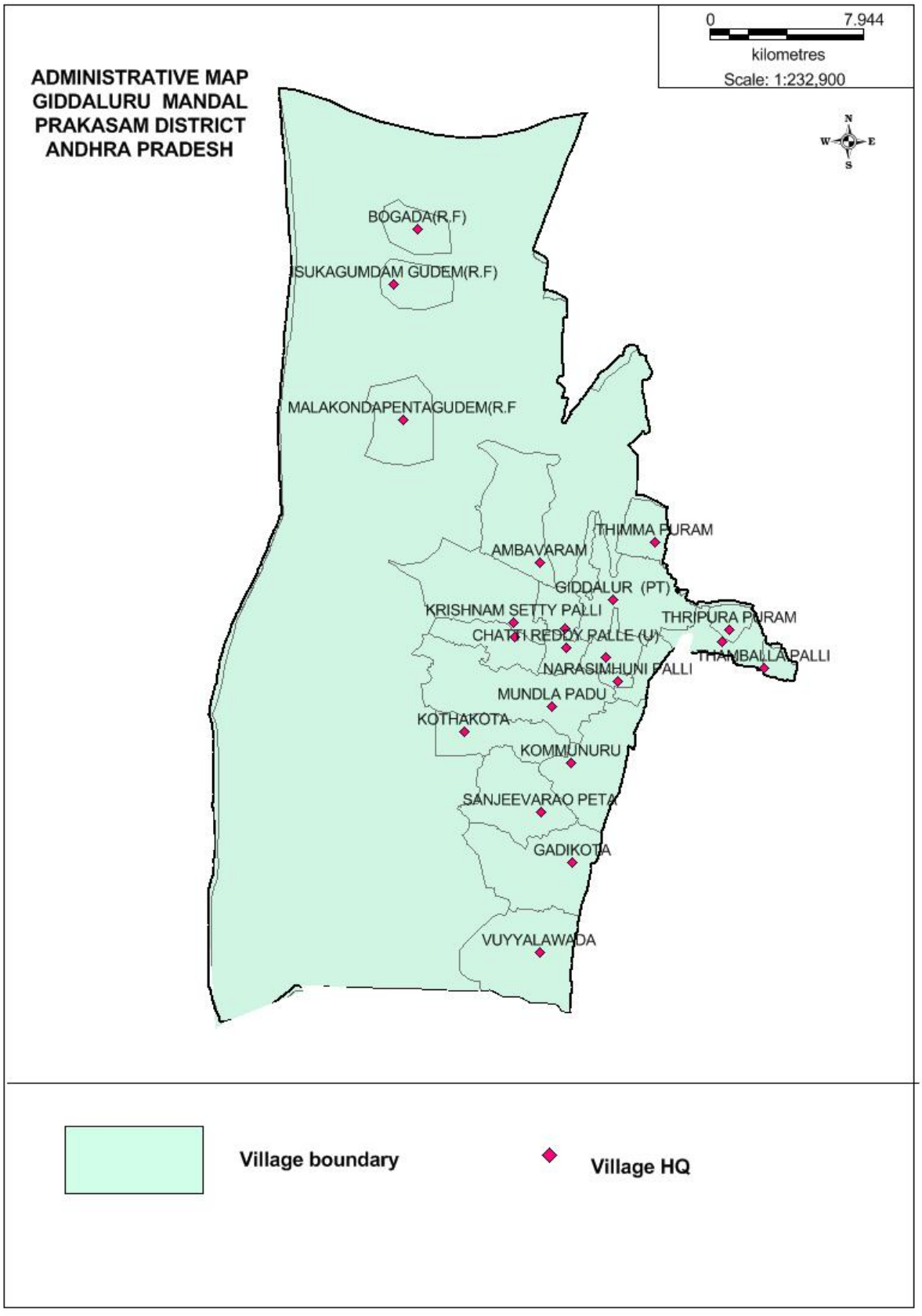

ADMINISTRATIVE MAP
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
0
7.944
kilometres
Scale: 1:232,900
N
W
E
S
BOGADA(R.F)
SUKAGUMDAM GUDEM(R.F)
MALAKONDAPENTAGUDEM(R.F
THIMMA PURAM
AMBAVARAM
GIDDALUR (PT)
KRISHNAM SETTY PALLI
THRIPURA PURAM
CHATTI REDDY PALLE (U)
THAMBALLAPALLI
NARASIMHUNI PALLI
MUNDLA PADU
KOTHAKOTA
KOMMUNURU
SANJEEVARAO PETA
GADIKOTA
VUYYALAWADA
Village boundary
Village HQ

Fig.2

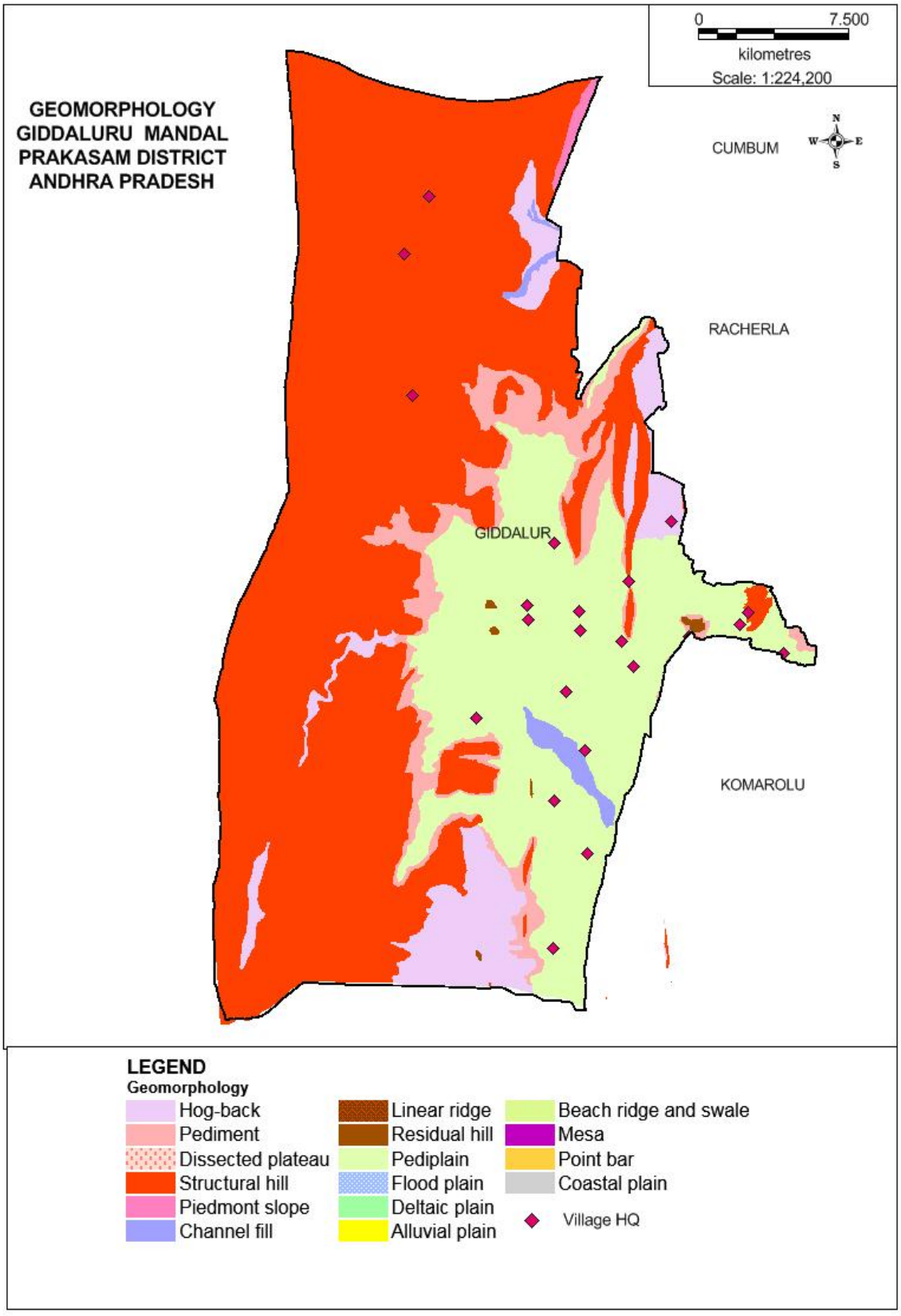

GEOMORPHOLOGY
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
0
7.500
kilometres
Scale: 1:224,200
N
W
E
S
CUMBUM
RACHERLA
GIDDALUR
KOMAROLU
LEGEND
Geomorphology
Hog-back
Pediment
Dissected plateau
Structural hill
Piedmont slope
Channel fill
Linear ridge
Residual hill
Pediplain
Flood plain
Deltaic plain
Alluvial plain
Beach ridge and swale
Mesa
Point bar
Coastal plain
Village HQ

Fig.3

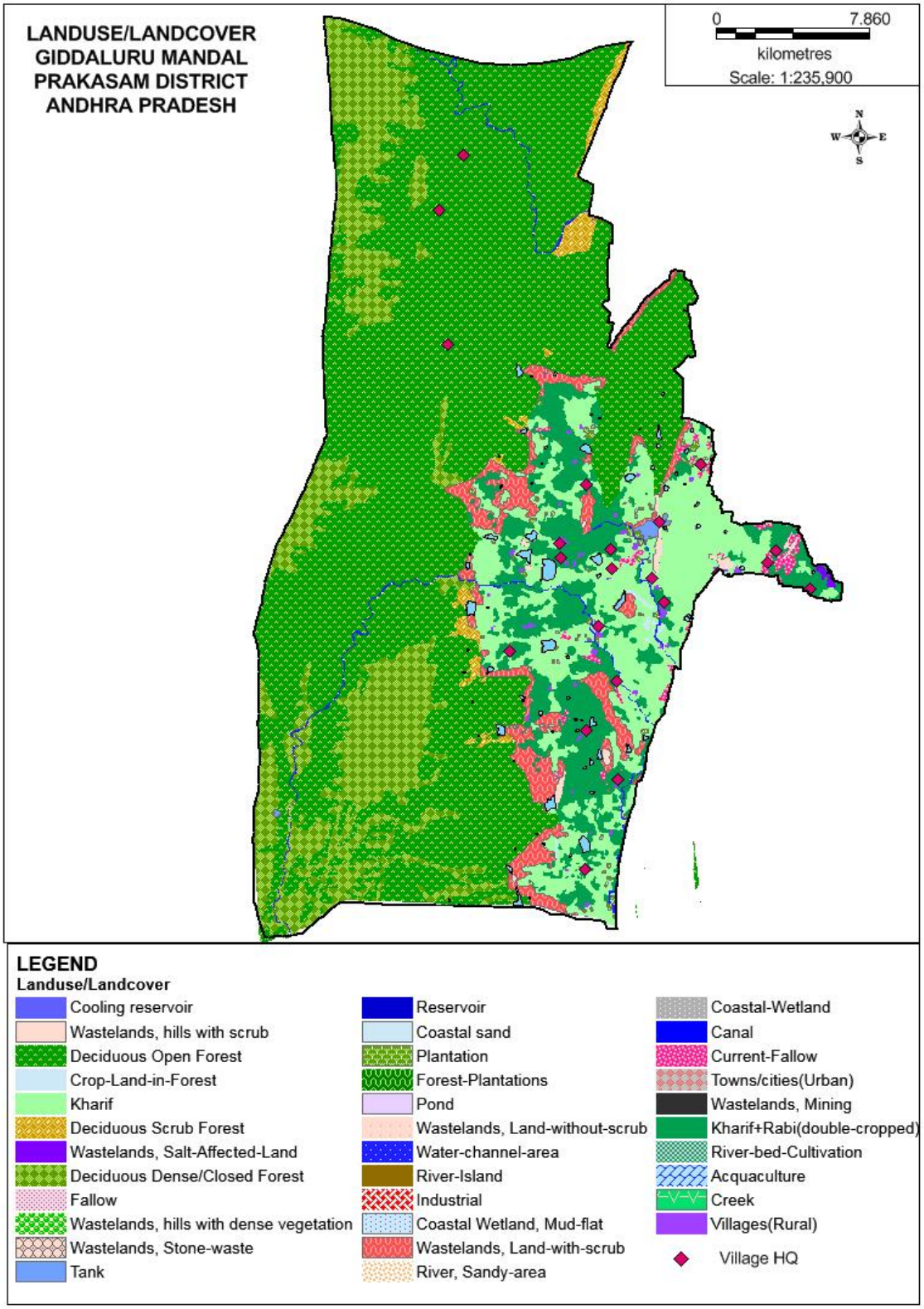

LANDUSE/LANDCOVER
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
0
7.860
kilometres
Scale: 1:235,900
N
W
E
S
LEGEND
Landuse/Landcover
Cooling reservoir
Wastelands, hills with scrub
Deciduous Open Forest
Crop-Land-in-Forest
Kharif
Deciduous Scrub Forest
Wastelands, Salt-Affected-Land
Deciduous Dense/Closed Forest
Fallow
Wastelands, hills with dense vegetation
Wastelands, Stone-waste
Tank
Reservoir
Coastal sand
Plantation
Forest-Plantations
Pond
Wastelands, Land-without-scrub
Water-channel-area
River-Island
Industrial
Coastal Wetland, Mud-flat
Wastelands, Land-with-scrub
River, Sandy-area
Coastal-Wetland
Canal
Current-Fallow
Towns/cities(Urban)
Wastelands, Mining
Kharif+Rabi(double-cropped)
River-bed-Cultivation
Acquaculture
Creek
Villages(Rural)
Village HQ

Fig.4

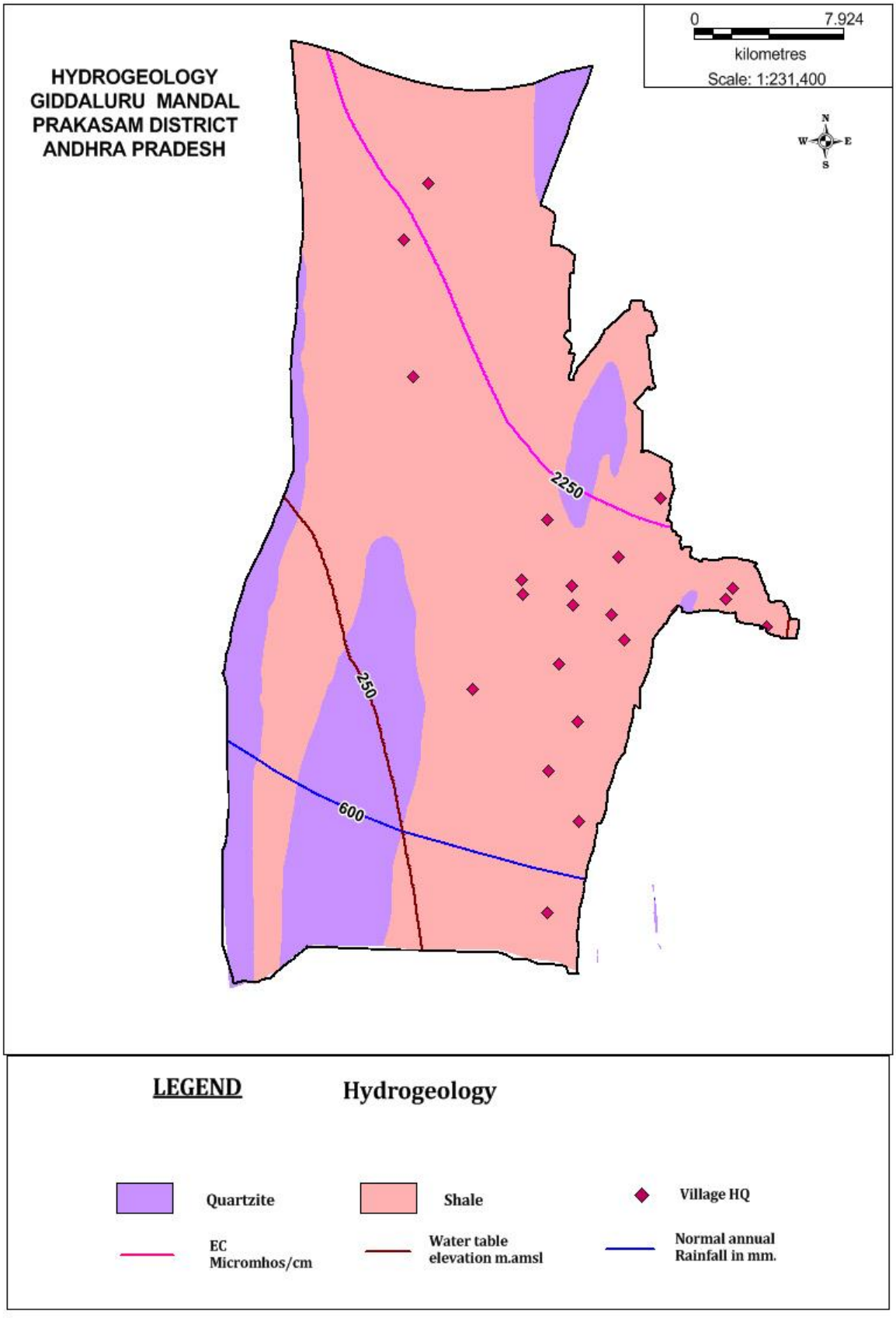

HYDROGEOLOGY
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
0
7.924
kilometres
Scale: 1:231,400
N
W
E
S
2250
250
600
LEGEND
Hydrogeology
Quartzite
Shale
Village HQ
EC
Micromhos/cm
Water table
elevation m.amsl
Normal annual
Rainfall in mm.

Fig.5

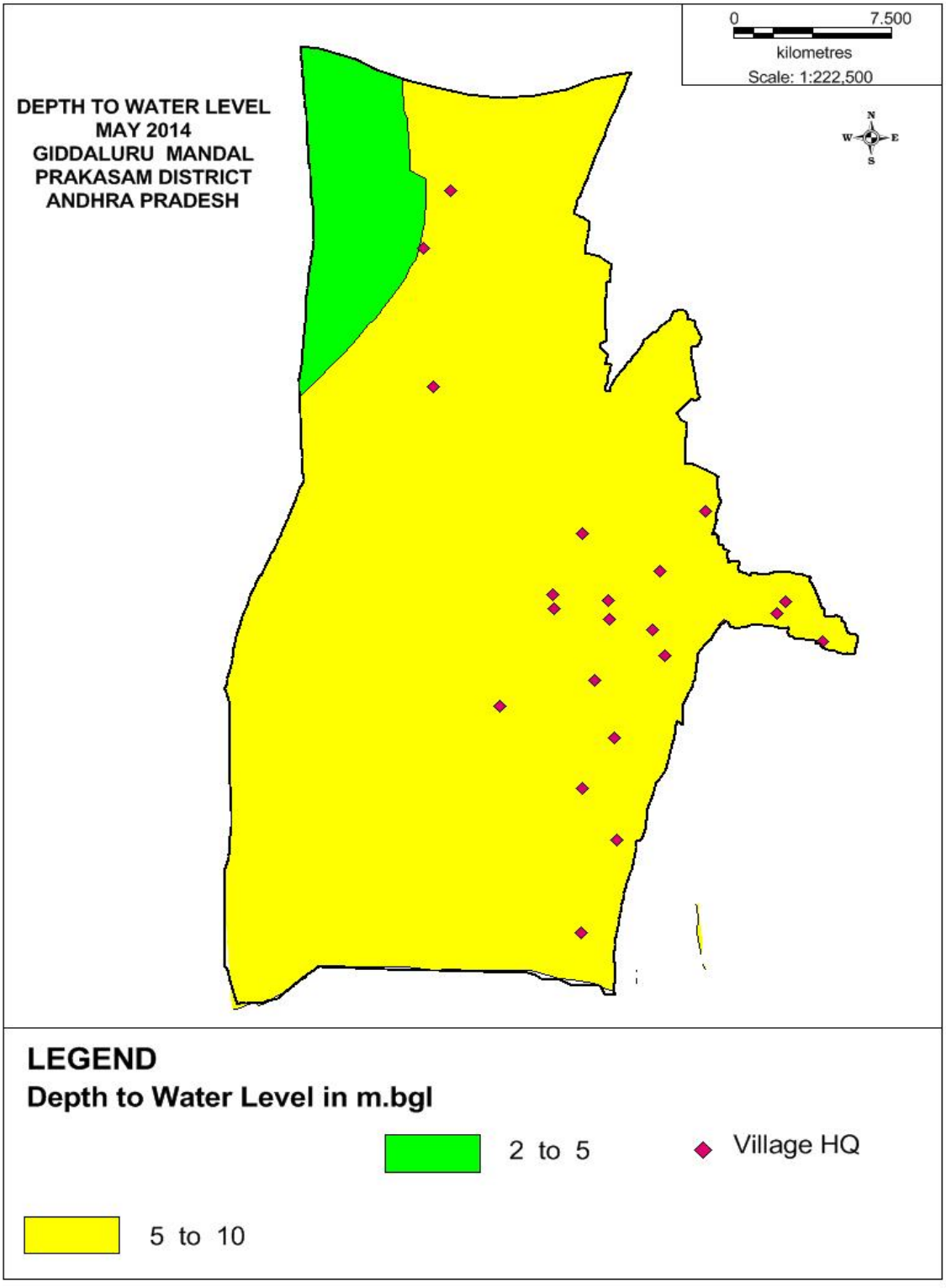

0
7.500
kilometres
Scale: 1:222,500
N
W
E
S
DEPTH TO WATER LEVEL
MAY 2014
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
LEGEND
Depth to Water Level in m.bgl
2 to 5
Village HQ
5 to 10

Fig.6

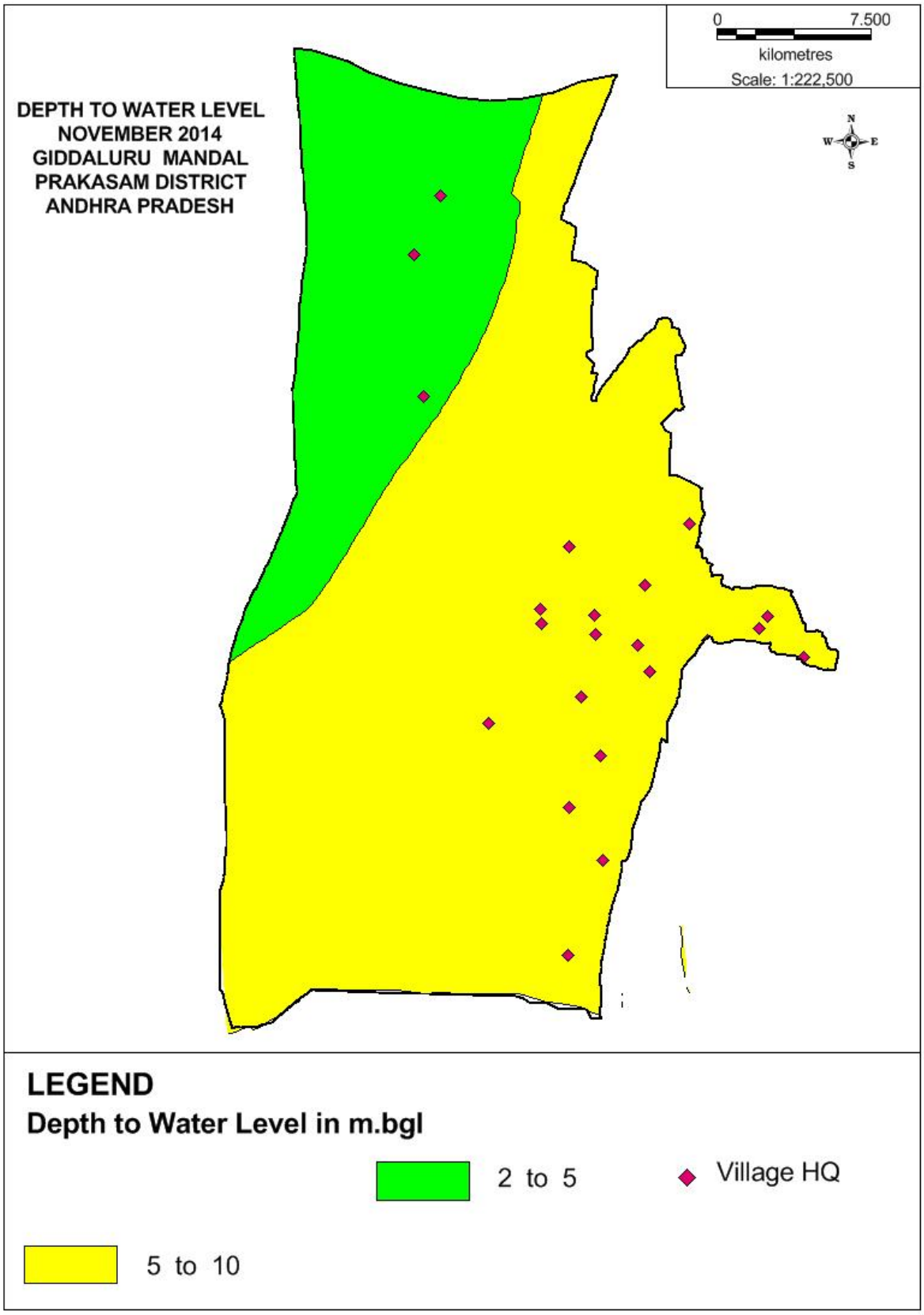
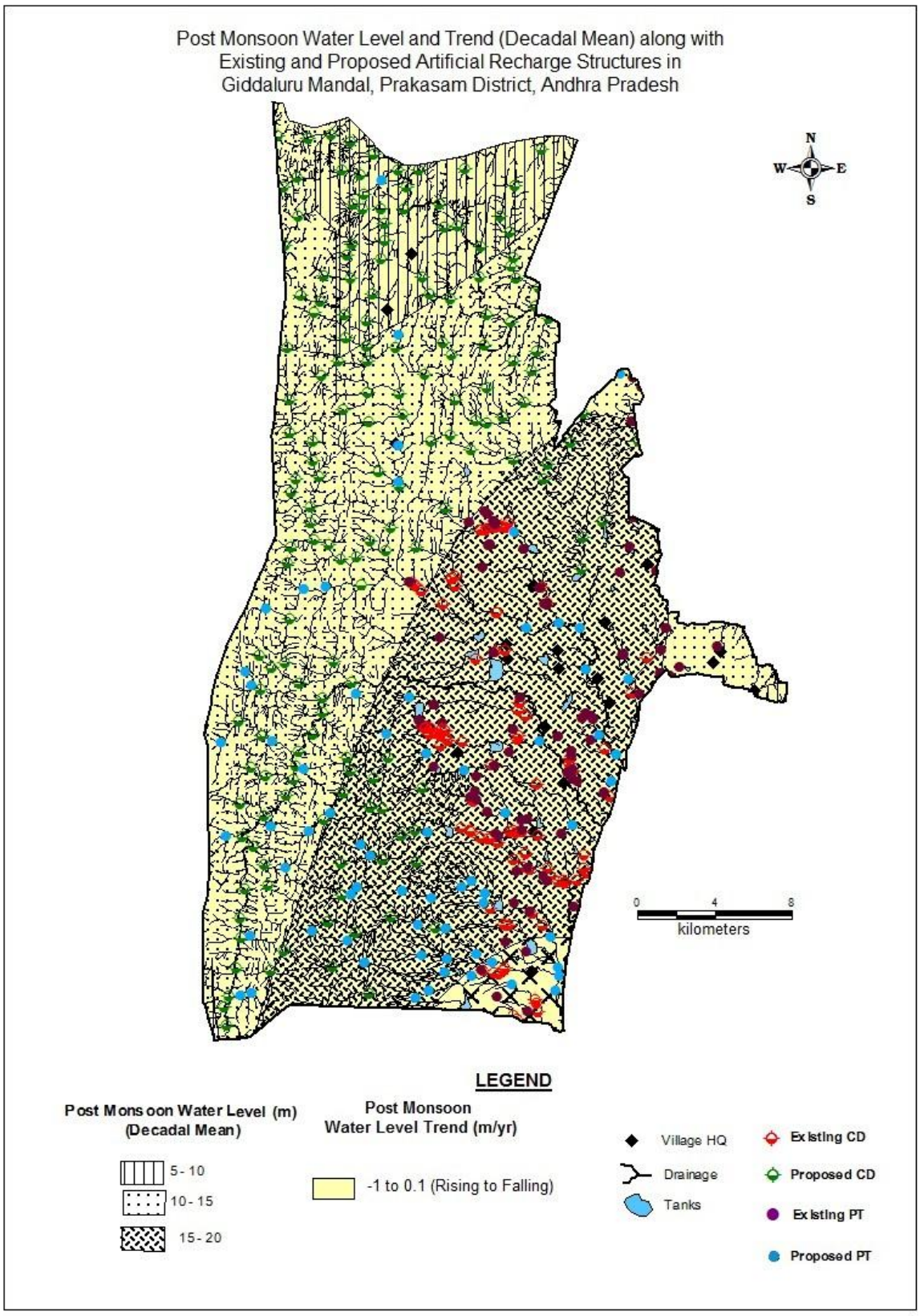

0
7.500
kilometres
Scale: 1:222,500
N
W
E
S
DEPTH TO WATER LEVEL
NOVEMBER 2014
GIDDALURU MANDAL
PRAKASAM DISTRICT
ANDHRA PRADESH
LEGEND
Depth to Water Level in m.bgl
2 to 5
5 to 10
Village HQ

Fig.7


Post Monsoon Water Level and Trend (Decadal Mean) along with
Existing and Proposed Artificial Recharge Structures in
Giddaluru Mandal, Prakasam District, Andhra Pradesh
N
W
E
S
0
4
8
kilometers
LEGEND
Post Monsoon Water Level (m)
(Decadal Mean)
5 - 10
10 - 15
15 - 20
Post Monsoon
Water Level Trend (m/yr)
-1 to 0.1 (Rising to Falling)
Village HQ
Drainage
Tanks
Existing CD
Proposed CD
Existing PT
Proposed PT